Integrating multidisciplinary knowledge into simulation models to organize organic wastes recycling in agriculture

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Abstract

Substituting chemical fertilizers by organic wastes is a way to improve agriculture sustainability. It requires designing new management scenarios of agricultural production systems based on the knowledge available on their biophysical and managerial components. Simulation models representing those systems as productive units spread over a territory together with data from agronomical experiments are jointly used to assess the performances of the scenarios against agronomical and environmental criteria. This approach is illustrated on two examples in periurban areas of Senegal and Madagascar.

Keywords

- System Dynamics and Theory
- OR in Agriculture
- Sustainable Development